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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,655	12/05/2003	Michael J. O'Phelan	279.168US2	1280

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SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402

EXAMINER

TSAL, H JEY

ART UNIT PAPER NUMBER

2812

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/728,655

Applicant(s)

O'PHELAN ET AL.

Examiner

H.Jey Tsai

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 36-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 36-55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 7, 39, 43, 44, 45, 46 are rejected under 35 U.S.C. § 102(e) as being anticipated by Breyen et al. 6,795,729, newly cited.

Breyen et al. a method of joining a connection member to a foil, the method comprising:

positioning the connection member 195 and the foil 185/190 against each other, fig. 6a, 4, 5a-5c, col. 13, lines 11-67, col. 14, lines 67,

forming a cold weld between connection member 195 and the foils 185/190 by forcing the connection member and the foil together between a hardened surface 207 and a staking pin 206, 211 which has a tip of less than or equal to approximately 0.174 mm (less than 0.762 mm) in diameter, col. 14, lines 60, fig. 5a-5c,

wherein forcing the connection member 195 and the foil 185/190 together comprises striking the foil with the staking pin and forcing the foil into the connection member, fig. 5a-5c, 4, 6a-6c,

anode layers 185, 190 are etched foil, col. 10, lines 33-64

each anode foil approximately 50-200 um, col. 10, lines 35-64.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 36-38, 52-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breyen et al. 6,795,729 in view of Greenwood, Jr. et al. 5,949,638, newly cited.

The reference(s) teach the features:

Breyen et al. teaches a method of coupling a plurality of anode connection members of a capacitor, the method comprising:

attaching an anode connection member of any shape by design choice 195, 232 to two or more of a plurality of anodes 185/190 such that a first section of the anode connection member is attached to a major surface of the two or more of a plurality of anodes and a second section of the L-shaped anode connection member overhangs an edge face of the two or more of a plurality of anodes, fig. 6-11,

Note: Breyen et al. teaches at col. 9, lines 47-53, the shapes of anode layers 185, cathode layers 175 and separator is layers 180 are primarily a matter of **design choice**, and are dictated largely by the shape or configuration of case 90 within which

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those layers are ultimately disposed. Anode layers 185, cathode layers 175 and separator layers 180 may assume any **arbitrary shape to optimize packaging efficiency**.

positioning each of the anode connection members 195 so that each anode connection member is flush with each other anode connection member or connection members adjacent to each anode connection member,

edge-connecting each anode connection member to the anode connection member or connection members adjacent to each anode connection member directly along an exposed end face of each of the connection members, fig.9, col. 20, lines 15-67,

edge-connecting comprises laser welding along a seam between each of the anode connection members, col. 12, lines 39-40,

wherein each of the plurality of connection members having a cut-out adapted to matchably fit within a notch on an anode, fig. 4, 9,

positioning the two or more foils in a stack, fig. 9,

forcing at least one foil comprising an etched anode foil together with one or more other anode foils, fig. 5-9, col. 2, lines 45-50, col. 3, lines 4-40,

wherein positioning the foils comprises stacking three etched anode foils 185/190 in a dimension perpendicular to a major surface of each of the anode foils, figs. 4, 6-9,

each anode foil approximately 50-200 um, col. 10, lines 35-47,

a staking pin 206, 211 which has a tip of less than or equal to approximately 0.174 mm (less than 0.762 mm) in diameter, col. 14, lines 60, fig. 5a-5c,

anode layer is a porous layer, col. 3, lines 10-15,

a capacitor with several hundred volts, col. 2, lines 5-10.

The difference between the references applied above and the instant claim(s) is: Breyen et al. teaches forming a cold weld between connection member 195 and the foils 185/190 by forcing the connection member and the foil together between a hardened surface 207 and a staking pin 206, 211 which has a tip of less than or equal to approximately 0.174 mm (less than 0.762 mm) in diameter but does not teach anode connection member is L shape. However, Breyen et al. teaches at col. 9, lines 47-53, the shapes of anode layers 185, cathode layers 175 and separator is layers 180 are primarily a matter of **design choice**, and are dictated largely by the shape or configuration of case 90 within which those layers are ultimately disposed. Anode layers 185, cathode layers 175 and separator layers 180 may assume any **arbitrary shape to optimize packaging efficiency**. And, Greenwood, Jr. et al. teaches at fig. 1 and col. 7, lines 35-53, a L-shape anode connection member 21 is cold welded to anode layer 11, 12...

And, specific dimension of capacitor voltage as claimed are taken to be obvious since these are variables of art recognized importance which are subject to routine experimentation and optimization and discovery of an optimum value for a known process is obvious. In re Aller, 105 USPQ 233 (CCPA 1955). And, even if applicants' modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art, In Re Sola 25 USPQ 433.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above references' teachings with a L shaped anode connection member as taught by Greenwood Jr, et al. because L-shape anode connection member would optimize packaging efficiency.

Claim 3, 6, 40, 41, 42 are rejected under 35 U.S.C 103 as being unpatentable over Breyen et al. as applied to claims 1, 2, 7, 39, 43, 44, 45, 46 above, and further in view of Shafer et al. 4,045,644, newly cited.

The difference between the references applied above and the instant claim(s) is: Breyen et al. teaches forming a cold weld between connection member 195 and the foils 185/190 by forcing the connection member and the foil together between a hardened surface 207 and a staking pin 206, 211 which has a tip of less than or equal to approximately 0.174 mm (less than 0.762 mm) in diameter but does not teach the conical shape pin tip. However, Shafer et al. teaches at figs. 2, 4-5, 8, col. 4, lines 1-5, the pin tip 42 of a cold weld apparatus is conical shape. And, at col. 5, lines 15-20, using about 600 pound to cold weld material. And, specific dimension of pin/tip as claimed are taken to be obvious since these are variables of art recognized importance which are subject to routine experimentation and optimization and discovery of an optimum value for a known process is obvious. In re Aller, 105 USPQ 233 (CCPA 1955). And, even if applicants' modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art, In Re Sola 25 USPQ 433.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above references' teachings with a conical pin/tip as taught by Shafer et al. because conical pin/tip has more contact surfaces than a pin/tip.

Claims 4-5 are rejected under 35 U.S.C 103 as being unpatentable over Breyen et al. as applied to claims 1, 2, 7, 39, 43, 44, 45, 46 above, and further in view of Carrico 5,041,942, newly cited.

The difference between the references applied above and the instant claim(s) is: Breyen et al. teaches forming a cold weld between connection member 195 and the foils 185/190 by forcing the connection member and the foil together between a hardened surface 207 and a staking pins 206, 211 which has a tip of less than or equal to approximately 0.174 mm (less than 0.762 mm) in diameter but does not teach the distance between pins 206 and 211 and the height. However, Carrico teaches at col. 6, lines 30-54, the spacing between conical pins (teeth) a cold weld apparatus is about 0.02 inches and the height is about 6 mils (0.006 inches). And, specific spacing of pin/tip as claimed are taken to be obvious since these are variables of art recognized importance which are subject to routine experimentation and optimization and discovery of an optimum value for a known process is obvious. In re Aller, 105 USPQ 233 (CCPA 1955). And, even if applicants' modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art, In Re Sola 25 USPQ 433.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above references' teachings with a spacing for conical pin/tip as taught by Carrico because spacing between conical pins/tips is an routine experimentation to obtain the desired strength for welding between anode tab and foils.



Claim 8 is rejected under 35 U.S.C 103 as being unpatentable over Breyen et al. as applied to claims 1, 2, 7, 39, 43, 44, 45, 46 above, and further in view of col. 3, lines 10-15 of Breyen et al. or Greenwood, Jr. et al. 5,949,638, newly cited.

The difference between the references applied above and the instant claim(s) is: Breyen et al. teaches forming a cold weld between connection member 195 and the foils 185/190 by forcing the connection member and the foil together between a hardened surface 207 and a staking pins 206, 211 which has a tip of less than or equal to approximately 0.174 mm (less than 0.762 mm) in diameter but does not teach using porous anode film. However, Breyen et al. teaches at col. 3, lines 10-15, anode layer is a porous layer and at col. 2, lines 5-10, a capacitor with several hundred volts. And, Greenwood Jr. et al. teaches at claim 10, porous anode layer of capacitor having 420 volts. And, specific capacitor voltage as claimed are taken to be obvious since these are variables of art recognized importance which are subject to routine experimentation and optimization and discovery of an optimum value for a known process is obvious. In re Aller, 105 USPQ 233 (CCPA 1955). And, even if applicants' modification results in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art, In Re Sola 25 USPQ 433.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above references' teachings with porous anode film with specific capacitor voltage as taught by Breyen et al. or Greenwood, Jr. because porous anode film would increase the capacitance and voltage.

### ***Conclusions***

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Applicant's arguments filed June 20, 2006 have been fully considered but they are not persuasive. Because newly cited references Beyen et al. teaches forming a cold weld between connection member 195 and the foils 185/190 by forcing the connection member and the foil together between a hardened surface 207 and a staking pin 206, 211 which has a tip of less than or equal to approximately 0.174 mm (less than 0.762 mm) in diameter as set forth above.

Any inquiry of a general nature or clerical matters or relating to the status of this application or proceeding should be directed to the customer service whose telephone number is (703) 308-4357.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Jey Tsai whose telephone number is (571) 272-1684. The examiner can normally be reached on from 7:00 Am to 4:00 Pm., Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael S. Lebentritt can be reached on (571) 272-1873.

The fax phone number for this Group is 571-273-8300.

hjt

8/13/2006



H. Jey Tsai  
Primary Examiner  
Patent Examining Group 2800